==========

Sequence Listing was accepted with existing errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: Fri Aug 03 17:44:02 EDT 2007

==========

Validated By CRFValidator v 1.0.2

Application No: 10587995 Version No: 1.1

Input Set:

Output Set:

Started: 2007-08-03 17:43:27.220
Finished: 2007-08-03 17:43:27.615
Elapsed: 0 hr(s) 0 min(s) 0 sec(s) 395 ms
Total Warnings: 1
Total Errors: 0
No. of SeqIDs Defined: 5
Actual SeqID Count: 5

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (5)

SEQUENCE LISTING

<110> METCALFE, SUSAN MARIE

<120> METHOD OF INDUCING OR MODULATING IMMUNE RESPONSE

<130> 25991-0002

<140> 10/587,995
<141> 2006-07-31

<150> PCT/EP05/000934
<151> 2005-01-31

<150> GB 0402051.7
<151> 2004-01-29

<160> 5

<170> PatentIn Ver. 3.3

<210> 1
<211> 2728
<212> DNA
<213> Homo sapiens

<400> 1
ggtggctggt tctgcgccgg atccgggaga ggggcgggcg ccattgtgct tcgctgccga 60
ctgcatttcc tcagtcacgg gcctagaact ccaaggagaa aggcggcgaa aaatctttaa 120
gaatggagtc taaaccttca aggattccaa gaagaatttc tgttcaacct tccagctcct 180
taagtgctag gatgatgtct ggaagcagag gaagtagttt aaatgatacc tatcactcaa 240
gagactcttc atttagattg gattctgaat atcagtctac atcagcatca gcatctgcgt 300
caccatttca atctgcatgg tatagtgaat ctgagataac tcagggagca cgctcaagat 360
cgcagaacca gcaacgggat catgattcaa aaagacctaa actttcctgt acaaactgta 420
ctacctcagc tgggagaaat gttggaaatg gtttaaacac attatcagat tcatcttgga 480
ggcatagtca agttcctaga tcttcatcaa tggtacttgg atcatttgga acagacttaa 540
tgagagagag gagagatttg gagagaagaa cagattcctc tattagtaat cttatggatt 600
atagtcaccg aagtggtgat ttcacaactt catcatatgt tcaagacaga gttccttcat 660
attcacaagg agcaagacca aaagaaaact caatgagcac tttacagttg aatacatcat 720
ccacaaacca ccaattgcct tctgaacatc agaccatact aagttctagg gattccagaa 780
attctttaag atcaaatttt tcttcaagag aatcagaatc ttcccgaagc aatacgcagc 840
ctggattttc ttacagttca agtagagatg aagccccaat cataagcaat tcagaaaggg 900
ttgtttcatc tcaaagacca tttcaagaat cttctgacaa tgaaggtagg cggacaacga 960
ggagattgct gtcacgcata gcttctagca tgtcatctac tttttttttca cgaagatcta 1020
gtcaggattc cttgaataca agatcattga attctgaaaa ttcttacgtt tctccaagaa 1080
tcttgacagc ttcacagtcc cgtagtaatg taccatcagc ttctgaagtt cccgataata 1140
gggcgtctga agcttctcag ggatttcgat ttcttaggcg aagatggggt ttgtcatctc 1200
ttagccacaa tcatagctct gagtcagatt cagaaaattt taaccaagaa tctgaaggta 1260
gaaatacagg accatggtta tcttcctcac ttagaaatag atgcacacct ttgttctcta 1320
gaaggaggcg agagggaaga gatgaatctt caaggatacc tacctctgat acatcatcta 1380
gatctcatat ttttagaaga gaatcaaatg aagtggttca ccttgaagca cagaatgatc 1440
ctcttggagc tgctgccaac agaccacaag catctgcagc atcaagcagt gccacaacag 1500
gtggctctac atcagattcg gctcaaggtg gaagaaatac aggaatatca gggattcttc 1560
ctggttcctt attccggttt gcagtccccc cagcacttgg gagtaatttg accgacaatg 1620
tcatgatcac agtagatatt attccttcag gttggaattc agctgatggt aaaagtgata 1680
aaactaaaag tgcgccttca agagatccag aaagattgca gaaaataaaa gagagcctcc 1740
ttttagagga ctcagaagaa gaagaaggtg acttatgtag aatttgtcaa atggcagctg 1800

catcatcatc taatttgctg atagagccat gcaagtgcac aggaagtttg cagtatgtcc 1860
accaagactg tatgaaaaag tggttacagg ccaaaattaa ctctggttct tcattagaag 1920
ctgtaaccac ctgtgaacta tgtaaagaga agttggagct taacctggag gattttgata 1980
ttcatgaact acatagagct catgcaaatg aacaagctga gtatgagttt atcagctctg 2040
gtctctacct agtggtgtta ttgcacttgt gcgaacaaag cttttctgat atgatgggaa 2100
atacaaatga accaagcaca cgtgtccgat ttattaacct tgcaagaact cttcaggcac 2160
atatggaaga tctcgaaact tcagaggatg attccgaaga agacggagac cataacagga 2220
catttgatat tgcctaactt catataagac agatggatga tctgtgaaca taagtgttta 2280
ttaaaaatgg caattaaata taaattactt ttgtgggga atgcctaata aatacattga 2340
ctatatataa aatgaatata tacatacaca tgtatgcctg tatatatata ttcattctcc 2400
agtgttgctg aattaaaatt ctgctggact ttttaacata gcaaatccga tgtttataaa 2460
ctggtaatca aaaaggtttt ttcttttagg tgagtgggaa agtattaccc ttgttttaaa 2520
tatctaagca atgcctatca accctttttt gtgttatgat tactgtagtc atatttatga 2580
aaaaaggttt gtgttttact cttgctagtg agaaaagtgg gacaaaatat acttttgaaa 2640
taaaatgcta tatggcacct aattattttt tcttttaaaa tgccttaagt tgcagtctca 2700
ttttgataat catttgcttc cagtgttt 2728

<210> 2
<211> 2720
<212> DNA
<213> Mus musculus

<400> 2
cgcatccgga ggggcggccg ccattgtgct tcgtcgccga cttctctgcc ggtagcccga 60
gagccgagcc gagcccagcg aggaaggcgg cggcggtgtg gctgcggcga gcgcgacact 120
ccctgcagcg gagtgctcgg tggaagaggg aaaccttaag aatggagtct aaaccttcca 180
ggattccaag aagaatttct gttcaaccct ctggctcttt aagcactagg atggtgtctg 240
gaaacagagg aaccagttta aatgattcat atcattctag agactcctcc tttagactgg 300
attctgaata tcagtctgca tcagcatcag cgtgtgcatc accatgtcag cctgcctggt 360
acagtgagtc tgagatacct cagggagcgc gggcacgagc acagacccag cagcgggatc 420
atgactcaaa gagacccaag ctttcctgta caaactgtgc atctacctca gctgggagga 480
acggtgggag tgggttaaat acagtgtcag attcttcttg gaggcatagt caagttccca 540
gatcttcatc aatggtactt ggttcatttg gaacagactt gatgagagaa aggagagatt 600
tggacaggag aagagagtcc tccatcagca atcttatgga ttataatcac cgaagtggtg 660
atttcacaac ttcatcatat gttcaagaaa gagttccttc ttcatattca cagggagcaa 720
gaccaaaaga gaatgcagtg agcactttac agttgaattc atcatccacc aatcaccaat 780
tgccttctga ccatcagaca gtaccaagtt ctagggactc cagtagaagt tctttcagat 840
cacatttttc tccaagacaa tcagaatctt ttcgcaacag ttcacatcct gcattttcat 900
atttttcaag tagaaatgaa actccaacta taagcaattc agaaaggggt tcatctcaga 960
gaccatatcg agaatcttct gacaatgaag gtaggcgtac aactaggaga ttgctgtcac 1020
ggatagcttc tagcatgtca tctacttttt tctcacgaag atctagtcaa gattccttga 1080
atacaagatc tttgagttct gaaaattata tttctccgag aaccctgact tcacagtctc 1140
ggaataatgg aacctcctcg tcctctgacg tcagtgaggg cagggcagct gaagcatctc 1200
agggatttag atttcttagg cgaagatggg ggttgtcgtc gctcagccaa aatcatagct 1260
ctgaaccaga ggcagaaaat tttaaccaag aatcagaagg tagaaattca ggaccatggt 1320
tgtcttcttc acttagaaat agatgcacac ctttgttctc gagaaggagg cgagagggaa 1380
gggatgagtc ttcaagaatg tctacgtcag atgtaccacc tagatctcat attttcagaa 1440
gagattcaaa tgaagtagtt catcttgaag cacagggtga ctcccttggg gctgctgcca 1500
accgaccaca agcatctgga gcgtcaagca gtgctgctgc aggtggctcc accccagagt 1560
tgcctcaggg tggaagaaat ccaggactaa cagggattct tcctggctcc ttgttccggt 1620
ttgcagtccc accagcactc ggcagtaatc tggctgacaa tgtcatgatt actgtagata 1680
ttatcccttc tggttggaat tcaactgatg ggaaaaatga taaagctaaa agtgcacctt 1740
caagagaccc agaaaaactt cagaaaatca aagaaagcct ccttttagag gactctgatg 1800
atgaagaaga aggggactta tgtagaattt gtcagatggc agcagcgtca tcatctaatt 1860
tattgataga gccgtgcaaa tgcacaggga gcctgcagta cgtccatcaa gagtgtatga 1920
aaaagtggtt acaagccaaa attaattctg gctcttcatt agaggctgtg actacctgtg 1980

```
aactctgtaa agagaagttg caacttaacc tggaggattt tgatattcat gaactacata 2040
gagctcatgc aaatgaacaa gctgagtatg agtttatcag ctctggtctc tacctagttg 2100
tcttactgca cttgtgtgaa caaagctttt ctgatatgat gggaaataca attgaaccaa 2160
gcactcgtgt ccgatttatt aaccttgcaa gaactcttca ggcacatatg gaagatctcg 2220
aaacttcaga ggatgaattc tgaagaagat ggagaccata agagaatgct tgatattgcc 2280
taacttcatt taagaaaaaa aaaaaaaagg atgatctgtg aacatgttta ttaaaactgg 2340
caattaagta tggataattt catggggtaa tgcctagtag attaattgac tatacataaa 2400
atgaatatat atatatacat gtataaatgt aaatatatat tcattctcaa gtattgctga 2460
actgaaattc ttgagctgga ccctttaaca ctggccagcg aatctcatgt ttataatatg 2520
taatccaagc atttttcctt ttggtgagtg ggaaagcatt acccttgttt gaaatatcta 2580
aacagtgctc atcaactttc ttctttgttg caattactgt agtcatattt atgggaaaaa 2640
aatgtttgtg tattagtctc ttgctagtga aaaaaagtca gataaaatgt ccttttgaaa 2700
taaaatgcca atggcaccta                                            2720
```

<210> 3
<211> 704
<212> PRT
<213> Homo sapiens

<400> 3

```
Met Glu Ser Lys Pro Ser Arg Ile Pro Arg Arg Ile Ser Val Gln Pro
  1               5                  10                  15

Ser Ser Ser Leu Ser Ala Arg Met Met Ser Gly Ser Arg Gly Ser Ser
             20                  25                  30

Leu Asn Asp Thr Tyr His Ser Arg Asp Ser Ser Phe Arg Leu Asp Ser
         35                  40                  45

Glu Tyr Gln Ser Thr Ser Ala Ser Ala Ser Ala Ser Pro Phe Gln Ser
     50                  55                  60

Ala Trp Tyr Ser Glu Ser Glu Ile Thr Gln Gly Ala Arg Ser Arg Ser
 65                  70                  75                  80

Gln Asn Gln Gln Arg Asp His Asp Ser Lys Arg Pro Lys Leu Ser Cys
                 85                  90                  95

Thr Asn Cys Thr Thr Ser Ala Gly Arg Asn Val Gly Asn Gly Leu Asn
            100                 105                 110

Thr Leu Ser Asp Ser Ser Trp Arg His Ser Gln Val Pro Arg Ser Ser
        115                 120                 125

Ser Met Val Leu Gly Ser Phe Gly Thr Asp Leu Met Arg Glu Arg Arg
    130                 135                 140

Asp Leu Glu Arg Arg Thr Asp Ser Ser Ile Ser Asn Leu Met Asp Tyr
145                 150                 155                 160

Ser His Arg Ser Gly Asp Phe Thr Thr Ser Ser Tyr Val Gln Asp Arg
                165                 170                 175

Val Pro Ser Tyr Ser Gln Gly Ala Arg Pro Lys Glu Asn Ser Met Ser
            180                 185                 190
```

```
Thr Leu Gln Leu Asn Thr Ser Ser Thr Asn His Gln Leu Pro Ser Glu
        195                 200                 205

His Gln Thr Ile Leu Ser Ser Arg Asp Ser Arg Asn Ser Leu Arg Ser
    210                 215                 220

Asn Phe Ser Ser Arg Glu Ser Glu Ser Ser Arg Ser Asn Thr Gln Pro
225                 230                 235                 240

Gly Phe Ser Tyr Ser Ser Ser Arg Asp Glu Ala Pro Ile Ile Ser Asn
                245                 250                 255

Ser Glu Arg Val Val Ser Ser Gln Arg Pro Phe Gln Glu Ser Ser Asp
            260                 265                 270

Asn Glu Gly Arg Arg Thr Thr Arg Arg Leu Leu Ser Arg Ile Ala Ser
        275                 280                 285

Ser Met Ser Ser Thr Phe Phe Ser Arg Arg Ser Ser Gln Asp Ser Leu
    290                 295                 300

Asn Thr Arg Ser Leu Asn Ser Glu Asn Ser Tyr Val Ser Pro Arg Ile
305                 310                 315                 320

Leu Thr Ala Ser Gln Ser Arg Ser Asn Val Pro Ser Ala Ser Glu Val
                325                 330                 335

Pro Asp Asn Arg Ala Ser Glu Ala Ser Gln Gly Phe Arg Phe Leu Arg
            340                 345                 350

Arg Arg Trp Gly Leu Ser Ser Leu Ser His Asn His Ser Ser Glu Ser
        355                 360                 365

Asp Ser Glu Asn Phe Asn Gln Glu Ser Glu Gly Arg Asn Thr Gly Pro
    370                 375                 380

Trp Leu Ser Ser Ser Leu Arg Asn Arg Cys Thr Pro Leu Phe Ser Arg
385                 390                 395                 400

Arg Arg Arg Glu Gly Arg Asp Glu Ser Ser Arg Ile Pro Thr Ser Asp
                405                 410                 415

Thr Ser Ser Arg Ser His Ile Phe Arg Arg Glu Ser Asn Glu Val Val
            420                 425                 430

His Leu Glu Ala Gln Asn Asp Pro Leu Gly Ala Ala Ala Asn Arg Pro
        435                 440                 445

Gln Ala Ser Ala Ala Ser Ser Ser Ala Thr Thr Gly Gly Ser Thr Ser
    450                 455                 460

Asp Ser Ala Gln Gly Gly Arg Asn Thr Gly Ile Ser Gly Ile Leu Pro
465                 470                 475                 480

Gly Ser Leu Phe Arg Phe Ala Val Pro Pro Ala Leu Gly Ser Asn Leu
                485                 490                 495
```

```
Thr Asp Asn Val Met Ile Thr Val Asp Ile Ile Pro Ser Gly Trp Asn
            500                 505                 510

Ser Ala Asp Gly Lys Ser Asp Lys Thr Lys Ser Ala Pro Ser Arg Asp
        515                 520                 525

Pro Glu Arg Leu Gln Lys Ile Lys Glu Ser Leu Leu Leu Glu Asp Ser
    530                 535                 540

Glu Glu Glu Glu Gly Asp Leu Cys Arg Ile Cys Gln Met Ala Ala Ala
545                 550                 555                 560

Ser Ser Ser Asn Leu Leu Ile Glu Pro Cys Lys Cys Thr Gly Ser Leu
                565                 570                 575

Gln Tyr Val His Gln Asp Cys Met Lys Lys Trp Leu Gln Ala Lys Ile
            580                 585                 590

Asn Ser Gly Ser Ser Leu Glu Ala Val Thr Thr Cys Glu Leu Cys Lys
        595                 600                 605

Glu Lys Leu Glu Leu Asn Leu Glu Asp Phe Asp Ile His Glu Leu His
    610                 615                 620

Arg Ala His Ala Asn Glu Gln Ala Glu Tyr Glu Phe Ile Ser Ser Gly
625                 630                 635                 640

Leu Tyr Leu Val Val Leu Leu His Leu Cys Glu Gln Ser Phe Ser Asp
                645                 650                 655

Met Met Gly Asn Thr Asn Glu Pro Ser Thr Arg Val Arg Phe Ile Asn
            660                 665                 670

Leu Ala Arg Thr Leu Gln Ala His Met Glu Asp Leu Glu Thr Ser Glu
        675                 680                 685

Asp Asp Ser Glu Glu Asp Gly Asp His Asn Arg Thr Phe Asp Ile Ala
    690                 695                 700
```

<210> 4
<211> 693
<212> PRT
<213> Mus musculus

<400> 4

```
Met Glu Ser Lys Pro Ser Arg Ile Pro Arg Arg Ile Ser Val Gln Pro
  1               5                  10                  15

Ser Gly Ser Leu Ser Thr Arg Met Val Ser Gly Asn Arg Gly Thr Ser
             20                  25                  30

Leu Asn Asp Ser Tyr His Ser Arg Asp Ser Ser Phe Arg Leu Asp Ser
         35                  40                  45
```

```
Glu Tyr Gln Ser Ala Ser Ala Ser Ala Cys Ala Ser Pro Cys Gln Pro
     50                  55                  60

Ala Trp Tyr Ser Glu Ser Glu Ile Pro Gln Gly Ala Arg Ala Arg Ala
 65                  70                  75                  80

Gln Thr Gln Gln Arg Asp His Asp Ser Lys Arg Pro Lys Leu Ser Cys
                 85                  90                  95

Thr Asn Cys Ala Ser Thr Ser Ala Gly Arg Asn Gly Gly Ser Gly Leu
            100                 105                 110

Asn Thr Val Ser Asp Ser Ser Trp Arg His Ser Gln Val Pro Arg Ser
        115                 120                 125

Ser Ser Met Val Leu Gly Ser Phe Gly Thr Asp Leu Met Arg Glu Arg
    130                 135                 140

Arg Asp Leu Asp Arg Arg Arg Glu Ser Ser Ile Ser Asn Leu Met Asp
145                 150                 155                 160

Tyr Asn His Arg Ser Gly Asp Phe Thr Thr Ser Ser Tyr Val Gln Glu
                165                 170                 175

Arg Val Pro Ser Ser Tyr Ser Gln Gly Ala Arg Pro Lys Glu Asn Ala
            180                 185                 190

Val Ser Thr Leu Gln Leu Asn Ser Ser Ser Thr Asn His Gln Leu Pro
        195                 200                 205

Ser Asp His Gln Thr Val Pro Ser Ser Arg Asp Ser Ser Arg Ser Ser
    210                 215                 220

Phe Arg Ser His Phe Ser Pro Arg Gln Ser Glu Ser Phe Arg Asn Ser
225                 230                 235                 240

Ser His Pro Ala Phe Ser Tyr Phe Ser Ser Arg Asn Glu Thr Pro Thr
                245                 250                 255

Ile Ser Asn Ser Glu Arg Gly Ser Ser Gln Arg Pro Tyr Arg Glu Ser
            260                 265                 270

Ser Asp Asn Glu Gly Arg Arg Thr Thr Arg Arg Leu Leu Ser Arg Ile
        275                 280                 285

Ala Ser Ser Met Ser Ser Thr Phe Phe Ser Arg Arg Ser Ser Gln Asp
    290                 295                 300

Ser Leu Asn Thr Arg Ser Leu Ser Ser Glu Asn Tyr Ile Ser Pro Arg
305                 310                 315                 320

Thr Leu Thr Ser Gln Ser Arg Asn Asn Gly Thr Ser Ser Ser Ser Asp
                325                 330                 335

Val Ser Glu Gly Arg Ala Ala Glu Ala Ser Gln Gly Phe Arg Phe Leu
            340                 345                 350
```

```
Arg Arg Arg Trp Gly Leu Ser Ser Leu Ser Gln Asn His Ser Ser Glu
        355                 360                 365

Pro Glu Ala Glu Asn Phe Asn Gln Glu Ser Glu Gly Arg Asn Ser Gly
    370                 375                 380

Pro Trp Leu Ser Ser Ser Leu Arg Asn Arg Cys Thr Pro Leu Phe Ser
385                 390                 395                 400

Arg Arg Arg Arg Glu Gly Arg Asp Glu Ser Ser Arg Met Ser Thr Ser
                405                 410                 415

Asp Val Pro Pro Arg Ser His Ile Phe Arg Arg Asp Ser Asn Glu Val
            420                 425                 430

Val His Leu Glu Ala Gln Gly Asp Ser Leu Gly Ala Ala Ala Asn Arg
        435                 440                 445

Pro Gln Ala Ser Gly Ala Ser Ser Ser Ala Ala Ala Gly Gly Ser Thr
    450                 455                 460

Pro Glu Leu Pro Gln Gly Gly Arg Asn Pro Gly Leu Thr Gly Ile Leu
465                 470                 475                 480

Pro Gly Ser Leu Phe Arg Phe Ala Val Pro Pro Ala Leu Gly Ser Asn
                485                 490                 495

Leu Ala Asp Asn Val Met Ile Thr Val Asp Ile Ile Pro Ser Gly Trp
            500                 505                 510

Asn Ser Thr Asp Gly Lys Asn Asp Lys Ala Lys Ser Ala Pro Ser Arg
        515
```